Fact Sheet

US Army Engineer
Research and Development Center
Waterways Experiment Station

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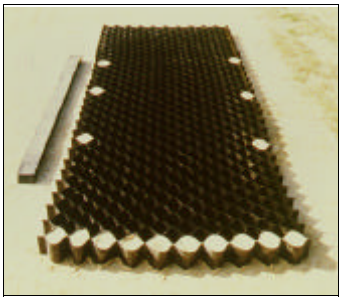
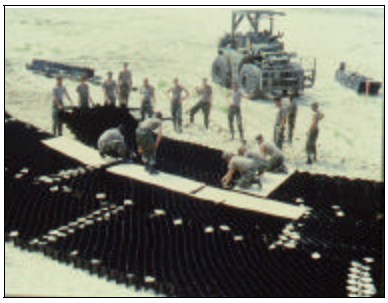
Public Affairs Office Ž 3909 Halls Ferry Road Ž Vicksburg, MS 39180-6199 Ž (601) 634-2504 Ž http://www.wes.army.mil

Road Construction Using Sand-Grid (Geocell) Confinement



Purpose: To provide information on military road construction using sand-grid (geocell) confinement technology.

Background: Sand-grid (geocell) confinement technology was developed at the US Army Engineer Waterways Experiment Station. The concept involves the confinement of sand or sandy materials in interconnected cellular elements called grids (geocells) to produce a load-distributing pavement base layer. It has application in areas where sandy materials are abundant and quality construction aggregates are not available. For sand-grid roads an aggregate, liquid asphalt, or Road Oyl® wearing surfacing is incorporated. A sand-grid road over a sand subgrade is capable of supporting over 10,000 passes of heavy truck traffic including tandem axle loads of up to 53,000 pounds. The plastic honeycomb grid is manufactured and shipped in unexpanded sections that are easily expanded for field use. Each 4-in.-thick section expands to form a honeycomb arrangement of 561 cells that cover an area 8 by 20 feet. Other applications of sand-grid technology include military field fortifications, slope protection, channel protection, and retaining walls.



Facts: The US Army Engineer Waterways Experiment Station is fully equipped and staffed to develop new expedient pavement construction technologies for any region of the world. Examples of improved construction guidance for roads over wet soils include work with Uni-Mat (interlocking wooden mat panels), geotextiles, and geogrids. Improved construction methods for pavements over beach or desert sands have included sand-grid (geocell) confinement, new expedient matting systems, and the newly developed sand-fiber stabilization technology.

Point of Contact: For technical assistance regarding sand-grid confinement technology or other expedient pavement construction techniques, contact Steve Webster at (601) 634-2282 or e-mail at webstes@wes.army.mil. General information on the US Army Engineer Waterways Experiment Station is available on the web site at http://www.wes.army.mil.